Claim 18. The hydrogel of Claim 1, wherein said enzyme is selected from the group consisting of phosphatases and kinases.

Claim 19. The hydrogel of Claim 8, wherein said growth factor is PDGF.

Claim 20. The hydrogel of Claim 9, wherein said enzymes are selected from the group consisting of collagenase, trypsin, elastase and combinations thereof.

REMARKS

This is in response to the official action dated November 26, 2001. Reconsideration in view of the following is respectfully requested.

The claims are amended in response to the Section 112 rejections set forth in paragraphs 1, 3, 4, 6, 7 and 8. With respect to paragraph 5, applicants submit herewith an article by Wang, "SOD Mimics", The University of Iowa, February 2001, in support of the fact that SOD mimics are a well understood term in the art, and therefore the claims are not indefinite.

Claims 1-3, 5 and 11-16 stand rejected under 35 USC 103, in view of Fortier and Galin. Fortier teaches a hydrogel based on PEG activated by chloroformate. Galin teaches PEG reacted with diisocyanate. The examiner takes the position that it would be obvious to substitute the diisocyanate of Galin for the chloroformate in Fortier in order to reach the claimed invention. However, Galin does not appear to relate to hydrogels or wound treatment, and so there would be no motivation to use the teaching of Galin. Furthermore, even if it were assumed that Galin suggests linking via urea groups to PEGs, and that there would be motivation for such teaching to be applied to hydrogels, it is nowhere foreseen that such a linkage would result in a vastly improved gel formation time.

Fortier is described as being problematic because of its minimum 20-minute gel time (and up to 270 minutes!) (specification page 3, lines 5-6). However, the claimed composition has a gel time (as in Fig. 1) measured in seconds. Thus, *a far superior gel formation time is reached by linking the proteins to the PEGs via the urea groups*. Nothing in either reference suggests this surprising and important improvement. Furthermore, other important advantages are obtained in comparison to Fortier, as set forth in the specification at page 3, lines 5-9. Therefore, the claims are not obvious over this combination of references. Furthermore, as generic claim 1 is allowable, then the non-elected claims should also be considered presently, and held allowable.

Wherefore, allowance of all pending claims is earnestly solicited.

Respectfully submitted,

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Claim 1 (twice amended). ~~Hydrogel~~ A hydrogel comprising at least one biomolecule chosen from the group consisting of proteins, enzymes ~~or~~, SOD/catalase enzyme mimics, ~~or a combination thereof, and PEGs, and parts of proteins and enzymes~~, and recombinant proteins and enzymes, ~~or a combination thereof the proteins, enzymes or both being connected to the PEGs~~linked via urea groups to PEGs.

Claim 2 (twice amended). ~~Hydrogel~~The hydrogel according to Claim 1, wherein the PEG has a molecular weight of from 8,000 to 18,000 g/mol~~, in particular from 10,000 to 15,000 g/mol~~.

Claim 3 (twice amended). ~~Hydrogel~~The hydrogel according to Claim 1, wherein the PEGs are activated by aliphatic or aromatic or araliphatic diisocyanates~~, are employed to activate the PEGs~~.

Claim 4 (twice amended). The ~~H~~hydrogel according to Claim 1, wherein the proteins are chosen from the group consisting of antibodies, matrix metalloproteases, enzyme inhibitors, ~~or~~ and peptides ~~are used as proteins~~.

Claim 5 (twice amended). ~~Hydrogel~~The hydrogel according to Claim 1, wherein free radical scavengers selected from the group consisting of superoxide dismutase, catalase, glutathione peroxidase, myeloperoxidase, SOD/catalase enzyme mimics and combinations thereof are used as proteins.

Claim 6 (twice amended). The ~~H~~hydrogel according to Claim 1, wherein the proteins are enzymes with antimicrobial activity ~~are employed as proteins~~.

Claim 7 (twice amended). The ~~H~~hydrogel according to Claim 1, wherein the proteins are enzymes with phosphorylating activity ~~are employed as proteins~~.

Claim 8 (twice amended). The ~~H~~hydrogel according to Claim 1, wherein the proteins are growth factors ~~are employed as proteins~~.

Claim 9 (twice amended). The ~~H~~hydrogel according to Claim 1, wherein the proteins are enzymes with proteolytic activity ~~are employed as proteins~~.

Claim 10 (twice amended). ~~H~~The hydrogel according to Claim 1, wherein the proteins are proteinogenic protease inhibitors ~~are employed as proteins~~.

Claim 11 (twice amended). ~~Hydrogel~~The hydrogel according to Claim 1, wherein proteins are employed in mixtures.

Claim 12 (twice amended). A Pprocess for producing a ~~hydrogel~~hydrogel according to Claim 1, ~~wherein~~
Comprising the steps of, in order:
~~e~~a) reacting anhydrous PEGs ~~are reacted~~ with diisocyanate in a solvent, optionally ~~with the addition~~in the presence of a catalyst,

~~f~~b) removing the solvent ~~is removed~~ from the resulting product of activated PEGs by filtration, washing or drying,~~;~~
~~c~~g) reacting the activated PEGs ~~are reacted~~ in aqueous solution with proteins, the proteins being present in a buffer which is optionally chosen so that the proteins retain their biological activity,~~;~~
~~h~~d) optionally, carrying out purification steps and washes ~~are carried out~~.

Claim 13 (amended). The Pprocess for producing a ~~hydrogel~~ hydrogel according to Claim 12, wherein the hydrogel is dehydrated.

Claim 14 (amended). A wound dressing for deep and extensive chronic wounds, and burns which comprises the hydrogel according to Claim 1.

Claim 15 (amended). Bandages, compresses, plasters, sheets and films comprising the hydrogel of Claim 1.

Claim 16. The hydrogel of Claim 3, wherein said diisocyanate is 1,6 hexamethylene diisocyanate.

Claim 17. The hydrogel of Claim 6, wherein said enzyme is selected from the group consisting of lysozyme and hydrolases.

Claim 18. The hydrogel of Claim 1, wherein said enzyme is selected from the group consisting of phosphatases and kinases.

Claim 19. The hydrogel of Claim 8, wherein said growth factor is PDGF.

Claim 20. The hydrogel of Claim 9, wherein said enzymes are selected from the group consisting of collagenase, trypsin, elastase and combinations thereof.